AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph on page 13, beginning at line 19 and ending on page 14, line 13 as follows:

Referring to Fig.- 1, inputs (1a) to (1n) from sensing devices such as transducers and switches located at various points in the appliance are received at the input of the Input Interface Unit (3) which also provides the drive for these sensing devices. The Input Interface Unit (3) converts these signals into a digital form suitable for processing by the Central Control Unit (6). The Central Control Unit (6) controls the internal operation of the Input Interface Unit (3) by means of control signals (5a-5[[f]]x) and receives the outputs generated by it (4a-4b). In addition, the Central Control Unit (6) also receives user input data (8a-8f) from the User Interface Unit (7). The Load Interface Unit (12) monitors the load conditions at various actuating devices in the appliance and provides signal (14) on the status of these devices to the Central Control Unit (6). In addition, the Supply Interface Unit (16) provides data on supply conditions (17) to the Central Control Unit (6). The Central Control Unit (6) processes all these inputs and generates outputs in terms of information that is required to be presented to the user (9a-9d) by visual or audible means through the User Interface Unit (7), as well as signals for operating the various loads and actuating devices in the appliance used for controlling its operation (15a-15p) to the Load Interface Unit (12). The Non-Volatile Memory (19) provides non-volatile storage of data required by the main circuit blocks comprising the Central Control Unit (6), Input Interface Unit (3), User Interface Unit(7), Load Interface Unit (12) and Supply Interface Unit (16). The Reset circuit (18) generates a Reset signal (R) required for the proper initialization of the main circuit blocks, especially when power is initially applied to the system. The Clock Generator (20) generates a clock signal (C) required by the main circuit blocks for their internal operation.

Please amend the paragraph on page 14, beginning at line 15 and ending on page 15, line 14 as follows:

Referring to Fig.- 2 which shows the block diagram of the Configurable Electronic Appliance Controller incorporating a Network Interface, inputs (1a) to (1n) from sensing devices such as transducers and switches located at various points in the appliance are received at the input of the

Input Interface Unit (3) which also provides the drive for these sensing devices. The Input Interface Unit (3) converts these signals into a digital form suitable for processing by the Central Control Unit (6). The Central Control Unit (6) controls the internal operation of the Input Interface Unit (3) by means of control signals (5a-5[[f]]x) and receives the outputs generated by it (4a-4b). In addition, the Central Control Unit (6) also receives user input data (8a-8f) from the User Interface Unit (7). The Load Interface Unit (12) monitors the load conditions at various actuating devices in the appliance and provides signal (14) on the status of these devices to the Central Control Unit (6). In addition, the Supply Interface Unit (16) and the Network Interface Unit (21) provide data on supply conditions (17) and the data/commands received from devices (23) in the external network, to the Central Control Unit (6). The Central Control Unit (6) processes all these inputs and generates outputs in terms of information that is required to be presented to the user (9a-9d) by visual or audible means through the User Interface Unit (7), signals for operating the various loads and actuating devices in the appliance used for controlling its operation (15a-15p) to the Load Interface Unit (12), and data required to be communicated to external devices (22) to the Network Interface Unit (21). The Non-Volatile Memory (19) provides non-volatile storage of data required by the main circuit blocks comprising the Central Control Unit (6), Input Interface Unit (3), User Interface Unit(7), Load Interface Unit (12), Network Interface Unit (21) and Supply Interface Unit (16) to control functionality of the appliance. The Reset unit (18) generates a Reset signal (R) required for the proper initialization of the main circuit blocks, especially when power is initially applied to the system. The Clock Generator (20) generates a clock signal (C) required by the main circuit blocks for their internal operation.

Please amend the paragraph beginning on page 15, line 16, and ending on page 16, line 5 as follows:

Fig. – 3 shows the internal block diagram of the Central Control Unit. Configurable Logic Circuit (25) of the Central Control Unit (6) receives signals (4a-4b) from the Input Interface Unit (3) and generates outputs (5a-5[[f]]x) for the control of the Input Interface Unit (3). It also receives signals (8a-8~~f~~) from the User Interface Unit (7) and sends signals (9a-9d) to control it. Similarly, the Configurable Logic Circuit (25) ~~receives~~ generates signals (15a-15[[h]]p) ~~from~~ for

the Load Interface Unit (12) and ~~sends~~ receives signal 14 ~~to~~ from it. Finally, it receives signal (17) from the Supply Interface Unit (16). Counters (27) and Timers block (26) is connected to an input of the Configurable Logic Circuit (25) and provides a collection of counters and timers for use by it. Sequence Control circuit (31) provides timing and sequence control signals required for the proper operation of the Configurable Logic Circuit (25), while Memory (28) provides a facility for storing data through interface signals (29) and (30) required for its functioning and the Real Time Clock RTC (33) provides time-of-day information through interface signals (34) and (35). The Configurable Logic Circuit (25) also receives signals (M, R, and C) from the Non-Volatile Memory (19), the Reset circuit (18) and the Clock Generator (20) respectively. The Counters and Timers block (26) and Sequence Control circuit (31) also receive signals from the Non-Volatile Memory (M), the Reset circuit (R) and the Clock Generator (C) required for their internal operation.

Q3 Cont'd.

Please amend the paragraph on page 16, lines 7-26 as follows:

Fig. – 4 shows the internal structure of the ~~User~~ Input Interface Unit. Sensor Drive circuits (36a-36h) provide bias signals for external sensing devices mounted in the appliance. The signal received from each sensing device is connected to one input of Analog Multiplexer (37) the output of which is connected to the input of Analog-to-Digital converter (38) which also contains additional circuitry for correcting for the offset and sensitivity of the signal received from the external sensing device. Analog Multiplexer (37) also receives selection control signals (5a) from the Central Control Unit (6) while the Analog-to-Digital converter (38) receives the data for the sensitivity and offset correction from the Non-Volatile Memory (M). The output of the Analog-to-Digital converter (38) is connected to one input of Digital Comparator (39) the other input of which receives reference data from the Central Control Unit (6). The output of the Digital Comparator (39) is connected to one input of Digital Multiplexer (40) which also receives digital input signals generated by external sensing devices in the appliance. The output of the Digital Multiplexer (40) is connected to the input of Noise Filter (41) which generates a filtered output for an input of the Central Control Unit (6). Additionally, signals (5e) and (5f) from the Central Control Unit (6) connect to the input and selection terminal respectively of Digital Demultiplexer (42) which generates signals (2a-2f) used for driving various digital sensing devices in the appliance.

Q4

Please amend the paragraph beginning on page 16, line 28 and ending on page 17, line 23 as follows:

Fig. – 5 shows the internal structure of the User Interface Unit. Sensor Drive circuits (43a-43h) provide bias signals for analog variable means, such as potentiometers, on the operating panel of the Electronic Appliance Controller. The signal received from each variable means is connected to one input of Analog Multiplexer (44) the output of which is connected to the input Analog-to-Digital converter (45) which also contains additional circuitry for correcting for the offset and sensitivity of the signal received from the analog variable means. Analog Multiplexer (44) also receives selection control signals ([[8a]]5a) from the Central Control Unit (6) while Analog-to-Digital converter (45) receives the data for the sensitivity and offset correction from the Non-Volatile Memory (M). The output of the Analog-to-Digital converter (45) is connected to one input of Digital Comparator (46) the other input of which receives reference data from the Central Control Unit (6). The output of the Digital Comparator (46) is connected to one input of Digital Multiplexer (47) which also receives digital input signals generated by switches in the operating panel of the Electronic Appliance Controller. The output of the Digital Multiplexer (47) is connected to the input of Noise Filter (48) which generates a filtered output for outputting to an input of the Central Control Unit (6). Additionally, signals ([[7c]]5g) and ([[8]]5f) from the Central Control Unit (6) connect to the inputs of Digital Demultiplexer (49) which generates signals (11a-11h) used for driving the switches in the operating panel of the Electronic Appliance Controller. Display Drive Circuit (50) receives input signals ([[7d-7k]]5h-5x) and signal ([[8]]5f) from the Central Control Unit (6) through Latches (51a-51f) and generates outputs (11i-11n) to drive the display device located in the operating panel of the Electronic Appliance Controller.

Please amend the paragraph beginning on page 17, line 25, and ending on page 18, line 14 as follows:

Fig. – 6 shows the internal structure of the Load Interface Unit. Latches (52a-52f) receive input control signals (15a-15f) from the Central Control Unit (6) and connect to Switching Control circuits (53a-53f) which drive Switches (54a-54f). The Switching Control circuits (53a-53f) also receive control signals (15g-15n) from the Central Control Unit (6). The output of each Switch (54a-54f) connects to an external load which is an actuating device that controls the operation of

the appliance. In addition, Current Sense devices (55a-55f), one in series with each Switch monitor the current drawn by each load. The signals (57a-57f) from each Current Sense device are received at the inputs of a multichannel Analog Multiplexer (58) which multiplexes these signals to its output under the control of selection signals (15o) from the Central Control Unit (6). The output of the Analog Multiplexer (58) is connected to the input of Load Current Sense (59) circuit which also has in-built circuitry for correcting for the offset and sensitivity of the signal, using correction data supplied by Non-Volatile Memory (M) under the control of the Central Control Unit (6).The output of the Load Current Sense circuit (59) is connected to the input of Digital Comparator (60) which also receives a reference signal (15p) from the Central Control Unit (6) at its other input. The output (14[[g]]) of the Digital Comparator (60) is connected to an input of the Central Control Unit (6).

Q6 Contd.

Please amend the paragraph beginning on page 18, line 24 and ending on page 19, line 4 as follows:

Fig.-8 shows the internal structure of the Network Interface Unit. Network Interface Circuit (66) connects to the signal lines (24) from the external network, provides compatible electrical signal levels and timings and a bi-directional transfer of signals between the network and the Configurable Electronic Appliance Controller. The signals received from the network are output to a Network Protocol Decoder (67) which extracts the useful information from the received signal and presents to the Central Control Unit (6). The signals from the Central Control Unit (6) are received by Network Protocol Encoder (68) which adds-on protocol defined information and feeds it to the Network Interface Circuit (66) for transmission to the external network.

Q7

Please amend the paragraph on page 20, lines 5-26 as follows:

WORKING :

Input Interface Unit (3), as shown in Fig.-4, provides drive signals (36a-36h) for analog sensing devices in the appliance, and receives inputs (1a-1h) from them. These signals are received at the inputs of Analog Multiplexer (37) inside the Input Interface Unit (3), which selectively connects one of these input signals to its output under the control of selection signal (5a) received from the Central Control Unit (6). The selected signal is then fed to the input of Analog-to-Digital

Q8

Converter (38) which contains special circuitry to adjust for the sensitivity and offset of the sensing device. The sensitivity and offset correction data [[(M)]] are received from Non-Volatile Memory (M) [[(19)]] under the control of Central Control Unit (6). The digital signal produced at the output of the Analog-to-Digital Converter (38) is applied to one input of Digital Comparator (39) which receives a reference signal (5d) from the Central Control Unit (6) at its other input. The Digital Comparator (39) compares the digital signals at its inputs and feeds the result to one input of a Digital Multiplexer (40). The other inputs of Digital Multiplexer (40) receive digital signals (1i –1n) from digital sensing devices such as switches in the appliance which are scanned by digital output signals (2a-2f) generated by the Digital Demultiplexer (42) in the Input Interface Unit (3). Selection signal (5c) generated by the Central Control Unit (6) controls the Digital Multiplexer (40) to selectively connect one of its input signals to Noise Filter (41) which removes any noise that may be present, before presenting it to the Central Control Unit (6).

Please amend the paragraph beginning on page 20, line 28 and ending on page 21, line 20 as follows:

Sensor drive circuits (43a-43h), as shown in Fig.-5, similarly provide bias for analog input devices, such as potentiometers, in the User Interface control panel of the Configurable Electronic Appliance Controller. The signals (10a-10h) received from the analog input devices are received by Analog Multiplexer (44) which selectively connects them one-at-a-time, under the control of selection signal (8a) from the Central Control Unit (6), to the input of Analog-to-Digital Converter (45)[[.]], which contains special circuitry to adjust for the sensitivity and offset of the analog input device, using data [[(M)]] supplied by Non-Volatile Memory [[(19)]] (M). The digital output from the Analog-to-Digital Converter (45) is applied to one input of Digital Comparator (46) which receives a reference signal (8d) from the Central Control Unit (6) at its other input. The Digital Comparator (46) compares the digital signals at its inputs and feeds the result to one input of a Digital Multiplexer (47). The other inputs of Digital Multiplexer (47) receive digital signals (10i-10n) from digital sensing devices such as switches in the appliance which are scanned by digital output signals (11a-11h) generated by the Digital Demultiplexer (49) based on input signal (7c) and selection signal (8f) from the Central Control Unit (6). The Central Control Unit (6) also supplies data for providing visual or audible feedback to the user, to the input of Latches (51a-51f). The latched data is applied to the input of Display and Audio

Q9 cont.

Driver (50) which converts the data with the help of signals [[(M)]] received from the Non-Volatile Memory (M) [[(19)]] into signals (11i-11n) suitable for driving the display device and audio output transducer.

Please amend the paragraph beginning on page 23, line 5, and ending on page 24, line 27 as follows:

In the application of the Configurable Electronic Controller for Appliances in a Washing machine (67) as shown in Fig.-[[8]]9, Water Temperature Sensor (70) and the Water Level Sensor (68) are driven by Sensor Drive circuits (36a) and (36b) in the Input Interface Unit (3) and provide analog signals (1a) and (1b) at the inputs of Analog Multiplexer (37). These signals

Q10

are selectively connected to the input of Analog-to-Digital Converter (38), as shown in Fig.-4, under the control of selection signal (5a) from the Central Control Unit (6). Analog-to-Digital Converter (38) also receives sensitivity and offset correction data (5b) from the Central Control Unit and uses the data for correcting for the sensitivity and offset of the received signal. The digital output from the Analog-to-Digital Converter (38) is compared with a reference value (4a) from the Central Control Unit (6) by the Digital Comparator (39). The result of the comparison is received at one of the inputs of Digital Multiplexer (40) which also receives the digital signal from Cover-Open Sensor [[(60)]] (69) at another input. The signals at the inputs of the Digital Multiplexer (40) are selectively brought to its output under control of selection signal (5c) from the Central Control Unit (6) and are filtered by Noise Filter (41) the output (4b) of which is connected to the Configurable Logic Circuit (25). Simultaneously, as shown in Fig. 5, user input data supplied through a potentiometer knob and keyboard in the Control Panel (71) of the Washing Machine is received as signals (10a) and (10i-10n) at the inputs of the Configurable Electronic Controller for Appliances. The analog signal (10a) from the potentiometer is selectively connected to the input of Analog-to-Digital Converter (44) under the control of selection signal (8a) from the Configurable Logic Circuit (25). Analog-to-Digital Converter (45) also receives sensitivity and offset correction data (8b) from the Configurable Logic Circuit (25) and uses the data for correcting for the sensitivity and offset of the received signal. The digital output from the Analog-to-Digital Converter (45) is compared with a reference value (8d) from the Configurable Logic Circuit (25) by the Digital Comparator (46). The result of the comparison

is received at one of the inputs of Digital Multiplexer (47) which also receives the digital signals from the keyboard (10i-10n) at other inputs. The signals at the inputs of the Digital Multiplexer (47) are selectively brought to its output under control of selection signal (8c) from the Configurable Logic Circuit (25) and are filtered by Noise Filter (48) the output (7b) of which is connected to the Configurable Logic Circuit (25). Signals (7c) and (8f) from the Configurable Logic Circuit (25) control Digital Demultiplexer (49) to generate signals (11a-11h) for scanning the keyboard in the Control Panel (71). At the same time, signals (7d-7k) from the Configurable Logic Circuit (25) after latching in Latches (51a-51f) drive the input of Display and Audio Driver circuit (50) which also receives display and audio mode control data from Non-Volatile Memory (M), and drives the external display and audio devices using signals (11a-11n) to provide feedback information such as annunciation of selected 'Wash Mode', to the user. As shown in Fig. 3, the [[The]] signals received by the Configurable Logic Circuit (25) are processed , using configuration data (M) from the Non-Volatile Memory (19), under the control of timing sequence control signal (32) received from the Sequence Control circuit (31), and parametric data (30) received from Memory (28) with the help of Counters and Timers (26) and Real Time Clock (33). As shown in Fig. 6, the [[The]] result of the processing generates control signal (15a-15f[[e]]) which control the operation of the Load Control Unit (12). The signals (15a-15f[[e]]) are latched in Latches (52a-52f) and drive switches (53a-53f) which operate the Detergent Dispense Valve (75), Heater (73), Water Fill Valve (74), Wash Motor (72), and Water Drain Valve (76), in the desired manner.

A10 cont'd.